

What is claimed is:

1. A water electrolysis system comprising:

a water electrolysis means that comprises a pair of catalyst layers and an electrolyte membrane sandwiched by both of the catalyst layers, electrolyzes pure water supplied to said catalyst layers, and brings out hydrogen from one catalyst layer and brings out a gas/liquid mixture of oxygen and pure water from the other catalyst layer;

a gas/liquid separating means for separating pure water from the gas/liquid mixture of oxygen and pure water both brought out from said water electrolysis means; and

a backflow means for making the pure water, separated by said gas/liquid separating means, flow back to said water electrolysis means; wherein:

said gas/liquid separating means is arranged to be directly connected to a discharge opening through which the gas/liquid mixture of oxygen and pure water is brought out from said water electrolysis means; and

said gas/liquid mixture directly flows into said gas/liquid separating means through said discharge opening.

2. The water electrolysis system according to claim 1, comprising a purifying means for purifying with the aid of ion exchange resin the pure water made to flow back by said backflow means, wherein pure water having been purified by said purifying means is made to flow back to said water electrolysis means.

3. The water electrolysis system according to claim 2, wherein said purifying means is arranged adjacent to said water electrolysis means.

4. The water electrolysis system according to claim 1, wherein said gas/liquid separating means comprises an intake opening for mint pure water to be supplied to said water electrolysis means.

5. The water electrolysis system according to claim 1, wherein said gas/liquid separating means comprises a filter for separating oxygen and pure water from each other.